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COCHRANE, B

AN
IMPROVEMENT
IN
THE MODE OF ADMINISTERING
THE
VAPOUR BATH,
AND IN THE APPARATUS CONNECTED WITH IT;
WITH
PLANS
OF
FIXED AND PORTABLE BATHS
FOR
HOSPITALS AND PRIVATE HOUSES,
AND SOME
PRACTICAL SUGGESTIONS
ON THE
EFFICACY OF VAPOUR,
IN APPLICATION TO VARIOUS DISEASES OF THE
HUMAN FRAME,
AND AS MAY BE BENEFICIAL TO THE VETERINARY BRANCH OF MEDICINE.

THE WHOLE ILLUSTRATED BY ELEVEN PLATES.

LONDON:

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1809.



PLANS

FIXED AND PORTABLE BATHS

HOSPITALS AND PRIVATE HOUSES

PRACTICAL SUGGESTIONS

EFFICACY OF VAPOUR

HUMAN TRAFFIC

Printed by Cox, Son, and Baylis, 75, Great Queen Street,
Lincoln's-Inn-Fields.

TO THE RIGHT HONOURABLE
LORD VISCOUNT MELVILLE.

MY LORD,

Unaccustomed to the language of adulation, which I know your Lordship despises, I shall express the purpose that has led to the present address, in the dictates of simple truth. A just sense of your Lordship's superior talents and of the zeal with which they have been unremittingly employed, during a lengthened series of years in the service of your country, induces me to solicit your protection for the improvement I have made in the mode of administering the Vapour Bath, which I am about to submit to the consideration of the public. It is intended for the general good of mankind, and is particularly calculated to benefit the NAVY;—it is, therefore, with the greater propriety that I address your Lordship on the occasion: your Lordship having, with so much honour to yourself, advantage to your country, and satisfaction to the heroes of the Ocean, presided over that department.

Availing myself of the present opportunity, permit me to offer to your Lordship the tribute of my gratitude, for the liberality and indulgence I once experienced at your Lordship's hands. The period to which I allude is, indeed, remote; but the kindness it embraced is fresh in my memory, where it will be ever cherished.

I have the honour to be, with deference and respect,

MY LORD,

Your Lordship's faithful

and obliged humble servant,

BASIL COCHRANE.

12, *Portman Square*,
10th June, 1809.

*London, No. 12, Portman Square,
28th Nov. 1803.*

WE have examined the improved Models as well as the Baths erected by the Honble. Mr. Cochrane; and we have no hesitation in declaring, that they are constructed with much ingenuity and simplicity, and that they possess, within a small compass, a degree of efficiency, accuracy and variety of application and power, beyond any thing of this nature which we have witnessed. We are, therefore, of opinion, that they would prove an admirable addition to all Naval and Military-Hospital-Establishments. There are few diseases in which, under the superintending care of the judicious Medical Man, they may not, at one stage or another, be useful; and in the prevention of disease, as well as during the periods of convalescence, they will also produce effects highly beneficial.

W. Farquhar, M. D.	W. Heberden, M. D.	M. Garthshore, M. D.
Joseph Adams,	Charles Gower, M. D.	J. Harness, M. D.
Thos. Whately,	R. Patrick Satterley, M. D.	R. Hooper, M. D.
Alex. Marcet, M. D.	Charles Price,	P. Rainier, M. D.
John Yelloly, M. D.	Gil. Blanc,	John Ring,
John Ring, Junr.	A. Bain, M. D.	W. Ruddiman, M. D.
R. S. Wells,	Primros Blair, M. D.	L. Poignand, M. D.
Thos. Smith, M. D.	J. Earle,	Charles Bell,
J. C. Ogilvie, M. D.	R. Willan, M. D.	James Veitch, M. D.
Francisco de Souza, M. D.	John Herdman, M. D.	J. C. Carpue, M. D.
J. R. Farre, M. D.	Leonard Gillespie, M. D.	F. Berger, M. D.
George Young,	R. Hope, M. D.	T. Kein, M. D.
Edwin Godden Jones, M. D.	G. Sandeman, M. D.	P. Murphy, Naval Hospi- tal, Jamaica.
W. Domcier, M. D.	John Cole, R. N.	R. Goodwin, R. N.
D. Mackinnon, M. D.	C. Konig, M. D.	J. Henry Davidson, M. D.
James Wilson,	T. Armstrong, R. N.	George Gowan, M. D.
Astley Cooper,	W. Bym, M. D.	D. Burke, R. N.
J. Cope, M. B.	M. L. Este,	Jn. Sims, M. D.
De Courcy Laffan, M. D.	J. Melliss, M. D.	George Jordan,
George Pearson, M. D.	B. M. Laughlin, R. N.	Luke F. Nagle, R. N.
Edw. Nath. Bancroft, M. D.	W. Tait, M. D.	M. Baillie, R. D.
C. D. Nevinson, M. D.	Pelham Warren, M. D.	J. Hart Meyers, M. D.
John Mc Namara Hayes, M. D.	William Dick, M. D.	A. Fillan, M. D.
Martin Tupper,	William Lewthwaite.	Henry Cline.
Thomas Davies,	J. Sanderson, M. D.	John Phillips, M. D.
Thomas Richardson.	Henry Ainslie, M. D.	

IMPROVEMENT

ON THE

MODE OF ADMINISTERING

THE

VAPOUR-BATH.

THAT every man owes a duty to his fellow-creatures, is a truth not to be denied: and it is equally true that every man is bound to perform that duty to the utmost of his power, according to the nature and extent of his means; nor is the tribute rendered to humanity less acceptable, because trifling in its extent, and humble in its pretensions. It is the intention, and not the act, that gives the point of estimation.

With such impressions, and holding such purposes in view, I have presumed to approach the public, and offer to its judgment some observations on vapour-bathing, which, after a variety of experiments during a period of ten years, I have brought to as much perfection as my confined abilities are capable of giving to it.

I am aware that the application of vapour has been long known, and frequently resorted to, in this country; yet I can safely say that, with me, it was entirely new, as I had scarcely ever heard of the vapour-bath, when necessity directed my attention towards it; and I was totally ignorant of every part of the machinery connected with it, when I first had recourse to its powers.

A very protracted residence in India had considerably deranged my constitution, and I began to feel the painful consequences. My chest was loaded with phlegm: I laboured under a severe, and almost incessant, cough; and my voice, which was feeble and interrupted, sometimes failed me. Accident about this time threw in my way "*Mudge's Inhaler*," and I made use of it with something of a prophetic assurance,

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that

that it would lead to salutary results; and my success was equal, at least, to my expectation.

This naturally produced reflection on the superior advantages that might be obtained from vapour, upon an extensive scale, and with a more general application.

Without the least knowledge in medicine, I clearly ascertained, that nine-tenths of the complaints with which Europeans, in India, were afflicted, originated in checked perspiration; and I conceived, that to remedy the evil, the best means would be an application of vapour, if it were possible to confine it in such a manner that the whole surface of the skin should be subjected to its influence.

With ideas thus disposed, I formed such plans as held out a prospect of giving them reality; and I laboured long to prove only the wide difference that lies between theory and practice. I will, however, pass over the various difficulties with which I struggled, and the numerous obstacles that opposed me, and content myself with noticing that, by a steady perseverance, and unremitting exertions, I at length found myself in possession of my object, and the bath I constructed was somewhat similar to that which is traced in the annexed plate 9, fig. 2.

I was of course the first to try the efficacy of the vapour I had thus learnt to controul; and such were the balmy effects it produced on my constitution, that they appeared to me the operation of magic. I expectorated with ease, and very copiously: the stricture on my chest was removed: I breathed freely: my cough left me; and my whole frame acquired new health and vigour.

No sooner were the qualities of the vapour, and the mode of administering it, known, than applications were made to me to receive it; and many obtained from it all the benefit they had anticipated. Amongst others was a gentleman, who, having taken a large quantity of mercury, was obliged to go to sea, and, before he was free from its consequences, rashly plunged into cold water. He was almost immediately seized with excruciating pains in all his joints: the contraction of his hands and fingers followed: his appetite forsook him, and he became extremely emaciated. In this deplorable state he took the vapour-bath; and, after repeating it fifteen times, during a period of forty-two days, he perfectly recovered.

On my return to England, in the year before last, I soon understood that

that the lengthened catalogue of its maladies grew out of causes nearly similar to those that multiplied disease in India; and when I contemplated the vast aid that medicine might in this country receive from the vapour-bath, I resolved on establishing one in Portman-square, my house there being well adapted to it, in order to make such experiments as should be necessary to demonstrate its excellence. Persuading myself, at the same time, that machinery might be so framed as to render it sufficiently convenient for our men of war; so that our brave sailors, when at sea, might be advantaged by it equally with their countrymen on shore.—This consideration gave a new and powerful spring to my exertions, and increased the ardour of my zeal. To the navy I am united by the strongest and most endearing ties: to that generous source I am chiefly indebted for my independence, and, consequently, for one of the first blessings of existence; and I have a brother and four nephews, who share my tenderest affections, holding high rank, and actively employed in it.

Towards the latter end of 1807, I commenced the execution of my purpose, assisted by the ingenious Mr. Moser, of Dean-street, Soho, whose abilities, as a mechanic, in the particular department of stoves and furnaces, and of conveying heat through a house, are well known; and the bath was opened for use in the month of April following, with an apparatus, some part of which is now in contrivance, calculated to vary the channel of communication for the vapour, and accommodate the patient in the mode of receiving it. The first patients were of the lower classes, and their complaints, for the most part, chronic rheumatisms and obstinate catarrhs; and these were in general relieved in two or three applications.

With such evidence to prove the powers of heat, thus conducted to the entire surface of the body, I conceived that I had advanced far enough to justify me in soliciting the Faculty to inspect a process intended as an auxiliary to their benign pursuits; and the certificate with which they have honoured it, will best express the sentiment they entertain of the good that may be expected from it. I intreat of the gentlemen whose signatures appear to that certificate, and which precedes these pages, to accept my grateful acknowledgments. In their examination of the vapour-bath, and in determining upon the effects it appeared capable of producing, I witnessed the liberality of enlightened minds, and the language of humane feelings. Elevated beyond the reach of prejudice, they viewed the subject submitted to their judgment with the eye of philosophy; and shewed themselves

selves desirous only of furthering its views to the full extent of its merits.

When this certificate be considered, it must be held so conclusive as to preclude the necessity, on my part, of saying any thing in favour of vapour-bathing, with a view of raising it in the estimation of the public. It contains the concurrent testimony of physicians of the first talents, and other medical gentlemen of the greatest celebrity in the kingdom. It therefore remains only for me to introduce a few of the many cases that have been relieved by the vapour; and amongst these may be found two or three that will, perhaps, appear extraordinary to those who are not professional men; but as they were under my own inspection, I can vouch for the veracity of their statement. Indeed, to offer mere matters of fact is all that can be expected from me; and it is the only province that I dare assume,

I have already mentioned that I have not any knowledge in medicine, and, consequently, the hints I may throw out must be regarded only as arising from practical observation; and with no other view than that the able physician may employ them, should they be judged worthy of his attention, in such way as to him shall appear best. And here I may be permitted to suggest, that however excellent the vapour-bath may be, and however simple and harmless its powers are in appearance, it should not be administered in any serious disease without the advice of a medical man. This precaution I have made so much the rule of my conduct that, with very few exceptions, all who have been received into the bath have brought such sanction with them. Upon this important point, however, and upon every other in relation to it, I must refer those who, like myself, have not received a medical education, to the observations "On cold and warm Bathing," in the learned and highly celebrated treatise, "*On the chemical History and medical Powers of Mineral Waters*," by Dr. SAUNDERS; and to a luminous and very comprehensive "*Essay on Warm and Vapour Baths*," by Dr. KENTISH. And I beg of those gentlemen to accept my sincere thanks for their polite attention towards my humble endeavours, in placing their works into my hands; a kindness that I shall ever remember with the most pleasing sensations.

In the course of my experiments in the application of vapour, I have seen inveterate catarrhs, chronic rheumatisms, contraction of the muscles and stiff joints give way to its influence; and two cases of gout, particularised in another place, have met a cure, at least so far

as any opinion can be conceived from appearances and circumstances. In one instance, calculi have been brought away in great quantity and without any of that agony suffered by the patient on former occasions, previous to his use of the Bath. And it may not be considered by many too trifling to mention also, that the tooth-ach has been dissipated by it in a few minutes.

Such are the complaints that, speaking of my own observations, seem to be within the powers of the vapour-bath. Doctor Kentish treats of many others; and the animated zeal with which he is now prosecuting the subject, directed by the talents he possesses, will doubtless lead to the most important discoveries.

In using the bath I have observed, that the periods most proper are before breakfast, or between ten in the morning and three in the afternoon; as after repletion the patient has generally complained of more heat and languor than at other times. But this possibly may be the case only, with those whose appetite is good; because when that has not been the case, I have not perceived any difference in reference to time. In the early stage of experiment, it was usual to allow the patient to remain in the bath from fifteen to thirty minutes; but, better advised by my medical friends, this practice was discontinued and from five to ten minutes were deemed sufficient, as a profuse perspiration is induced in the course of three minutes. Carrying that advice further, the degree of heat was reduced from 130 to 110 or 120 degrees and communicated, not gradually as formerly, but by shocks, varying this mode, however, according to circumstances and the particular situation of the patient. The same friends assisted me in rectifying another error. Instead of allowing the patient to continue in bed two or three hours after bathing, closely covered up and taking warm liquors to encourage perspiration, he remained there only a quarter of an hour, and then lightly covered; and, since reading Dr. Kentish's essay, he has been rubbed very dry and suffered to go, almost immediately into the fresh air: unless the weakened state of his frame, from the violence of indisposition, has rendered an indulgence necessary; or in cases that required friction, and in those cases my servants perform that operation according to the mode adopted in India, there called shampoing, and which might be learnt by any person, with great ease, in an hour. Having touched on shampoing I shall trespass to remark, that it is capable of more beneficial effects than will be imagined upon a slight consideration of a mean so trifling in its seeming. The Indians hold it in the highest estimation

resort to it continually, both as a luxury and as a remedy. After much fatigue and in excessive lassitude, it is the first of restoratives; and it is excellent in disposing to sleep, having frequently succeeded after opiates have failed. These are facts to which I can speak from my own experience, and from what I have witnessed in others. The enlightened mind, therefore, ever directed to the discovery of facilities in aid of known application, may not regard these observations as altogether unworthy notice; but will, on the contrary, give to their object the credit due to its promise, and employ it to every purpose of which it shall be found susceptible. It is to this end that I have travelled a little out of my path. Returning to the point whence I have digressed I have to submit, in regard to the effect produced by different degrees of heat upon different persons, that when gradually given to 105 the patient, after remaining in the bath fifteen minutes, has suffered much from languor, which increased on going to bed and having perspiration superinduced by covering and warm drinks; but when the heat has been communicated suddenly and so raised to 110 or 115 degrees and continued only seven minutes, the patient, after having lain down half an hour with only a single blanket over him, or merely rubbed dry, has never complained of any such sensation; on the contrary he has enjoyed a greater than usual flow of spirits. In another instance, in which the patient continued in the vapour, gradually introduced, nearly half an hour at 120 degrees, the effect produced seemed distinct from what had appeared on other occasions. Mr. Moser, the person I have above mentioned, was affected with a lumbago and his pains were so excessive, that he walked with great difficulty: after taking the bath in the above state and for the same length of time, was put to bed where he lay an hour in a highly provoked perspiration that ultimately became so profuse that, to use his own words, it ran from him in streams and completely drenched the blankets that were under him. The circumstance alarmed him, and he supposed that he never should be able to rise again: or that, if he did, it would be in such a state of debility as to destroy every hope of recovering his health; but, after indulging in those gloomy thoughts some time, he fell into a profound sleep and slept undisturbed and perfectly tranquil for several hours, and when he awoke he, to his great joy perceived, that he had left all his complaints in the bath: that his health was renovated; and that he was as capable of returning to the labours of his avocation as at any one period of his life.—Medical gentlemen will consider these apparently opposite results from nearly similar causes; and their opinion will be a guide to the

the uninformed. In tracing the virtues and capacity of the vapour in its varieties, those gentlemen will I am convinced also ascertain, whether it may not be extended beyond the external surface and introduced with similarly good effect internally; and whether it might not be much better in sore throats than the *inhaler* which requires more exertion than merely receiving into the throat a stream of vapour thrown into the mouth. In offering these trifling suggestions, as well as in advancing the few equally trifling remarks that are scattered in this paper, I experience the utmost diffidence and bow with deference; and if they should be, as probably they are, superfluous, I am sensible they will be treated with liberal indulgence. To be instrumental in assisting my fellow creatures when in an agony of pain, and to give comfort to a bed of sickness by soothing its sufferings, has been and ever will employ my anxious thoughts. On the present occasion I can have no other view. I have brought the bath, at a very considerable expence and with labourious attention, to the state in which I now submit it to the public; and if I should at some future period learn that it produces general benefit, let the degree be ever so small, I shall be abundantly repaid and greatly rewarded.

In the baths I have constructed, I have united economy with convenience, and that the public may be accurately informed on the subject of the expence to be incurred in establishing them, I have subjoined several estimates delivered to me by the persons whom I have employed; although it is very probable that others may be found to perform the work required upon much more moderate terms; and the annexed plates will convey a tolerably accurate idea of the baths themselves, and of the machinery used in them. In order to be sufficiently explanatory in describing the plates I fear that I have been too prolix; but I was apprehensive that if I had been more concise, I should not be fully understood.

Adverting to the point of economy which I have spoken of as joined with the convenience of the bath, I may say that in houses required to be heated the expence of fuel may be diminished; and the vapour may at the same time be diverted to culinary purposes. In public hospitals and houses the saving would be exceeding great, and to elucidate the fact I have only to state, that Mr. Moser in his proposition to erect baths for the Middlesex hospital, has offered to receive his payment from the diminution that will be occasioned in the expenditure of coals.

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In the plates are given the different baths and all the machinery that I have been able to devise, and these may be altered, increased, or diminished according to circumstances.

The baths in plate 3, are as well adapted to a ship as to a house, and the vapour can be generated in the manner shewn in plate 6: or in the ship's boiler, to which leaden pipes might be easily united, or the flexible tubes, as in plate 2, fig. 8, 9, might be substituted; and the whole could be stowed away in a very small compass. So that when the hardy sailor, after having for many hours braved the inclemency of the severest weather in the coldest climates, shall find himself benumbed deprived almost of every power and incapable of further exertion, may by five minutes application of the vapour thus prepared for him, obtain every desired relief and be restored to the capacity of returning to his arduous duties. Nor is the benefit confined to the Northern regions; in those countries where the rays of a perpendicular sun dart upon his head, diminishing his strength by enervating his whole system: in those countries where disease in different forms makes its attacks without a warning, and with so much fury as to open the door to death before the Physician can check its progress; in such countries and weighed down by such oppression, he will experience equal salutary effects from it. Doctor Vietch, to whose friendly attentions and valuable suggestions for several months I am infinitely indebted, is fully impressed with the belief that the yellow fever, which has operated and still continues the most dreadful ravages in the West Indies, may be divested of a great part of its malignity, if not totally subdued by the assistance of the vapour bath. He is on his passage to Antigua where, as head of the Naval Hospital there, he will have an opportunity of proving how far his ideas upon this subject are well founded.

In giving the ninth plate my principal object was to point out to the proprietors of Hotels and those of Taverns, where the mail and stage Coaches put up, how conveniently at a trifling expence, they might occasionally convert every room of their dwellings into steam baths, for the health and comfort of travellers and others frequenting them. Possibly they may upon a consideration of the hints I have thrown out, in relation to the vapour bath, perceive that the accommodation would not only be gratifying to their customers, but, in more instances than seen at the first blush of the thing, a source of extensive emolument to themselves. If, however, they should not be disposed to adopt the plan which this plate holds out, they may be more favourable towards
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the portable bath, sketched in plate 6, 7, which is particularly well calculated for private families. Mr. Higgingbotham, proprietor of the Hotel in Jermyn Street, is erecting one of these in consequence of the signal and unexpected benefit he received from a few applications of the vapour; his case, which was the Gout, will be seen detailed, amongst those with which I shall close the task I had assigned to myself, and is the most extraordinary of the whole.

The bath represented in plate 2, fig. 4, is, in my conception, essential to every bathing room of sufficient dimensions to admit it: as it sometimes occurs that the patient is incapable of sitting in a chair: or it may be otherwise desirous that he should receive the vapour in a recumbent posture; or lastly, the cold or tepid bath may sometimes be recommended. It is necessary only to add, that in this bath the vapour will reach 110 degrees, and if required it can be covered with flannel as in plate 3.

Our venerable Prelates, whose power to do good is equalled only by the benevolence of their disposition may in their respective dioceses: and the Man of feeling, on whom Heaven has bestowed abundance, in his neighbourhood, greatly relieve the sufferings of the afflicted poor, by establishing general or portable vapour-baths. The poor are so circumstanced, by exposure to every change of the weather, that they are more subject than others to the Ague; and I have heard many medical gentlemen express an opinion, that vapour might be very efficacious both in the cold and hot fit. I have endeavoured to procure a patient under this complaint, but without success.

In the course of my experiments it occurred to my mind, that the vapour would be of great advantage to that useful animal the Horse; which has the strongest claims on our attention, if not on our gratitude. I therefore consulted gentlemen, more conversant than myself with his complaints and the remedies applicable to them, and the very warm encouragement they gave to my proposition, led me to contrive the bath that appears in plate 9. On one point I had myself sufficient knowledge, namely that to throw a horse into a perspiration was extremely difficult, and required much more time than can always be bestowed on him; and I had ascertained that the vapour would effect the purpose in a few minutes. Mr. Hall, proprietor of the stables in Halkin Street, Grosvenor Place, has erected a bath for the purpose, according to the plan that I suggested to him, with sanguine expectations of great success in the use of it. Possibly there are some who may

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feel

disposed to ridicule the idea, but whilst endeavouring to further the cause of humanity, in obedience to its dictates, I shall encounter every thing that unkindness may urge with the greatest indifference. In speaking at all upon the subject of vapour-bathing, I have done no more than perform as I conceive, an incumbent duty; and therefore, do not look for applause, which is due only to merit; and I would fain hope that satire and sarcasm will be disarmed of their asperity, when they learn, that my sole object is to throw my mite into the treasury of Medecine, with an anxious wish that it may be acceptable to those, who make the good and happiness of mankind their study and care.

CASES.

— *Squire*, aged 49, whose habits of life were of an active nature, had lived regularly and been, generally, exempted from disease. For the last four months he had experienced a severe chronic rheumatism, that seized upon almost every joint of his body, particularly the knees and shoulders, the former of which were much swollen: his body was emaciated, his pulse weak; and he was unable to walk, or even to raise his arms above his head. He had taken the most approved prescriptions, without any more than trifling temporary benefit. He received the vapour bath thrice generally, at intervals of two three and four days; after which he was able to walk without a stick, and use his arms freely. Persevering in the use of the bath for some time longer, the desired effect was produced, and he is now perfectly well.

The vapour-bath, in this instance, was always attended with an increase of appetite; and, indeed, such has generally been the case in every other.

William Styles, coachman, aged 30, of a robust constitution, contracted a very severe cold which continued upon him about a week; and one day whilst cleaning his master's carriage he was taken with a shivering fit, accompanied by great pains in his joints and great uneasiness. The general bath* was immediately ordered: in the course of an hour he was placed in it, and remained there about 12 minutes, with the temperature of 120 degrees, inhaling the vapour as much and as long as possible. In six minutes he found himself much at ease, and in 12 minutes his complaints were completely removed.

Diana Drisdén, employed in the kitchen, of a strong constitution, contracted a violent cold, which, as is usual in such cases, she neglected. The symptoms were a hard cough and difficulty of breathing, with a swelled face; she also complained of much head-ach, and pains in all her joints. She did not report the state of her health until the third day of her illness, when she was immediately ordered the general bath, in which she remained 15 minutes, at the temperature of 120 degrees, keeping her mouth in a position to inhale the vapour. She was then wrapped up in the bell tent flannel gown, and treated as was the coachman in the preceding case. The
next

* Pl. 1. fig. 1.

next morning the swelling in her face was much reduced ; her cough easier ; she breathed freely ; and the pains in her joints had left her.

The following night she went through the same operation, and next morning found herself perfectly well.

Henrietta Brown, housekeeper, suffered still more severely than *Diana Driscoll*, from the same cause : the same remedy was applied to the one as had been used by the other, and with equal success. It is to be observed that *Henrietta Brown's* symptoms were the most alarming, as she had lost her voice ; which was, however, restored to her in the course of ten minutes after she had been in the bath.

David Pollock, an upholsterer, aged 29, had for four months been afflicted with a chronic rheumatism. His hands, his ankles, and knees, were affected by stiffness, pain, and swelling ; his right hand was extremely painful and absolutely useless to him. Changes of weather and motion very much distressed him ; and he felt relief, only, from the warmth of his bed. His constitution had suffered considerably, and there also appeared some affection of the heart, or of the large vessels in its vicinity. His breathing was difficult ; he had not been able to lie in the horizontal position for the last six days, nor capable of attending to his business during the whole of his indisposition. He had lived freely at former periods of his life ; and on this account, and in consequence of his complaints, had taken a great variety of medicines, but to very little purpose.

Under the dictation of circumstances and appearances, the vapour was administered with very great caution. The first application afforded immediate relief to the complaint of his chest ; and the general effect was such that, although his coming to my house from his own had employed him nearly two hours, that he returned home in fifteen minutes. The difficulty of breathing was removed, and he has, after the first experiment, invariably enjoyed a good night's rest in any position.

In this case, by fourteen applications, sometimes generally, at other times topically, the Patient was restored to health, and to his ordinary powers.

Mr. Higginbotham, master of the British Hotel, Jermyn-street, aged 52, had been afflicted with the gout for the last twenty years ; experiencing two regular paroxysms every year. He is a tall, lusty man, of a full habit, and has always lived well, but by no means intemperately.

His attacks, which were preceded by spasms and depression of spirits, generally

generally continued from six to ten weeks ; and, as he himself declared, the misery and torture he endured was scarcely supportable.

He had a fit in January last, when the swelling in the right hand was excessive. A tolerably accurate idea of the back part of it may be formed, by imagining a large abscess on the point of rupturing. Both feet were much swollen and inflamed : the knee of the left leg and both elbows much affected ; but the pain of the right elbow was particularly severe.

In this situation he was advised to try the vapour-bath, which he did topically on the 24th of January, keeping his right hand and feet in it for 15 minutes, at a temperature as high as he could bear it.—This single experiment produced a wonderful effect : his pains were considerably diminished ; his joints lost much of their stiffness : he had some refreshing sleep at night ; and the next day he was able to walk a little, which he had previously been unable to do.

On the 26th of January he had both his hands and feet in the bath, and experienced still further relief ; but contracting a severe cold, his progress was considerably retarded.

Thus circumstanced, he was directed to take the bath generally, at 120 degrees ; after which he lay, wrapped up in flannel, for half an hour, taking a little warm wine and water to keep up the perspiration.

The next morning the swelling in his hand had considerably subsided : his cold disappeared : he was able to walk without his crutches ; and in the subsequent part of the day he had the free use of his right hand.

He repeated the experiment soon afterwards : he slept very soundly during the succeeding night ; and the next day found himself perfectly recovered, free from gout and cold, and in that state he still continues.

William Dean, butler to Sir John Macpherson, aged 45, complained of extreme irritability, and of pains and stiffness in his knees, symptoms that were much increased by the change of weather. In this way he had suffered during the winter season, with slight intermissions, nearly twelve years. He was generally lame, and incapable of carrying himself erect. His complaint, which originated in exposure to severe vicissitudes of weather, whilst on the Continent, was not accompanied by fever : his appetite was good ; and after becoming completely warm in bed, his pains generally subsided.

In this case the topical bath was taken, at intervals of two days, three times, and twenty-five minutes each time, on a rising gradation from 96 to

120 degrees; his health was, by these means, in every respect perfectly restored, and he is now free from pain and every kind of inconvenience.

John Westbrook, aged 49, suffered under chronic rheumatism, particularly in the shoulders and ankles, accompanied with a degree of pain so considerable, as to incapacitate him from following his trade, that of a gardener. His complaints were of about twelve months' standing, and to procure relief had taken a variety of prescriptions without any permanent benefit. Exercise invariably gave him much uneasiness; and he always felt himself easier when warm in bed, than when exposed to the influence of the open air.—The vapour was applied six times topically, and twice generally; and at each time his appetite improved. The joints, on every application gained an accession of pliancy and powers of action: his night's rest became progressively better; and he is now able to pursue his usual labour with his former vigour.

John Dayley, aged 34, a painter, had during three months lost the use of his hands, and in consequence had been rendered incapable of following his trade. His secretions were, however, regular and his appetite was good; yet his countenance and skin clearly shewed that some hurtful cause had acted on his constitution.

In this case the vapour-bath was applied locally fifteen times, with the best success: he has recovered the use of his hands: his complexion has resumed its healthy appearance; and he is again able to follow his trade.

Mr. Prosser, head waiter at the Thatched House Tavern, aged 58, had long endured excessive pain in the region of the kidneys, and thence down his groins. His groins across the lower part of the abdomen were hard and swollen, and gave to him the sensation of great weight and pressure downwards. He frequently passed calculi, and always with agony; at length he was seized with something of palsy, that attacked him on one side, so that he lost the powers of his arm, thigh and leg. In this state he received the vapour generally, and almost immediately afterwards discharged a quantity of calculi and sand, with infinitely less pain than on former occasions, and he felt something relieved in other respects. Thus encouraged, he persisted in the use of the vapour, with the intermission of sometimes one, two, three and four days, at a temperature varying between 110 and 115 degrees, as suggested by circumstances, for upwards of three months; and is now restored to his health, and the use of his limbs. All his pains have been in a considerable degree dissipated: the swelling in his groins and belly have disappeared, and he no longer complains of any uneasiness there.

He

He still has recourse to the bath occasionally, which he finds greatly contributes to strengthen his system, now relieved from the incumbrances that only a few weeks ago rendered existence miserable. The last time he received it, five or six days ago, he expressed himself in the warmest terms for the blessings he had derived from its powers.

R. Macdonald, Esq. of Staffa, during the course of three weeks suffered excessive pain from an inflammatory complaint in his eyes. He reflected on the property of heat, conveyed through the medium of water, as holding out some promise of benefit, and accordingly placed his head into the bath, so as to receive the vapour locally. The relief was as great as it was sudden, and one experiment proved sufficient. He has not since felt any pain: the inflammation has entirely subsided; "his sight is," as he himself expresses, "completely restored; and his eyes are as strong and well as ever they were."

Captain Ellis, 25th Dragoons, had for nearly four years been afflicted with a rheumatism, accompanied by a shooting pain apparently in the bone of one of his legs, that deprived him entirely of his nightly rest, and he walked with difficulty. As a last resort he tried the bath, and in four general and two topical applications was entirely recovered.

From Dr. Meyers to the Honourable Basil Cochrane,

Dear Sir,

Your very polite attention to me, and the very beneficial as well as agreeable accommodation your kindness has afforded me, by the use of your invaluable and improved vapour-bath, when suffering under severe lameness and indisposition, from late and repeated attacks of the gout, demand from me my most particular acknowledgement. The utility of the bath to invalids of various classes, is too obvious to urge me to enter into a minute detail of your very useful invention. By your machinery, vapour of any degree of heat, whether medicated or not, may be conveyed with facility and comfort to any part afflicted, and, when required, to the whole body. Every one conversant with the innumerable ills that await the human frame, must have deplored, with me, the difficulty, the inconvenience, the loss of time and, in some cases, the utter impossibility to obtain a warm-water-bath in the sick bed-room, and when obtained, how insufficient and difficult the management. All this is effectually obviated by your ingenious contrivance; for in a room of very limited dimensions, your vapour-bath, to any degree of heat, may be introduced to answer every purpose the practitioner may have in view.

view; and it is so portable that a servant may transport it from one room to another, at a minute's notice. The inspection will convince any one; it will therefore be unnecessary for me to dwell any longer on the subject, as you so generously intend making your plan public. The expense to obtain your apparatus will be within the power of many: I have no doubt, therefore, of its general adoption in private families, on a small scale, and in hospitals, for the use of the poor, on a larger one. After eighteen weeks painful confinement to my chamber, by a most unrelenting fit of the gout, I was induced by your invitation, and the persuasion of several of my medical friends, to be put into my carriage to inspect your vapour-bath. I saw it, approved it, and immediately used it, and repeated it for eight times, about the heat 120° of Fahrenheit's thermometer, and continued its operation each time twenty minutes. On my first trial, I was directly solaced and eased from pain, and am now enabled to pursue my wonted and professional occupations with ease and comfort. I can now without assistance get in and out of my carriage, though on my first visit to you I was unable to do the one or the other without much help; and it was with difficulty and by the use of crutch-sticks I got through your hall! My general health, since my first visit to you, has much improved: the exercise, the variety that has since engaged my mind, the change of air, from close confinement, has conjoined to restore me, under Heaven, completely. I am, therefore, fully satisfied of the excellence of your vapour-bath, and its general utility in a variety of complaints to which the animal economy is subject, when judiciously administered. But I will now conclude this long letter, without adding any thing more on this subject, as I trust the world will soon be in the possession of your plan, which will indeed be a blessing to the suffering part of the community, and which by due management may and will become a lasting benefit to mankind—and, I had almost said to the brute creation also.

I am, with every sentiment of respect and regard for your philanthropy,
my dear Sir, your obedient and humble servant,

*John-street, America-square,
6th June 1809.*

JOSEPH HART MEYERS.

Honble. Basil Cochrane.

EXPLANATION OF PLATE I.

FIG. 1. The machinery employed in generating and distributing vapour and dry heat.

a. a.—A tube for the introduction of atmospheric air, received from the outside of the house, where a grate is fixed for that purpose. This tube entwining round the upper part of the boiler, b, which it enters at c, renders the air it contains heated. From the boiler it passes into the pipe d, which communicating with the grand steam-pipe, e, by a cock, f, the heat is continued so as to warm several apartments.

g.—The safety valve regulated by the balance, h. From this valve branches a tube, i, to throw off the superabundant vapour.

j.—The manhole worked by a balance, k, to which are fixed two rods: at the extremity of one of them, l, that passes into the boiler at m, is fixed a flat stone, n, of a circular shape, which, resting upon the surface of the water, keeps it at its desired height, by occasionally procuring a fresh supply, the other rod, o, turning the cock, p, fixed in a pipe, one part of which, q, connects with a cistern, and the other, r, enters the boiler at s.

t.—A pipe from the grand steam-pipe, e, having three branches, u, v, w.

u. heats the closet x.

v, w, applicable to culinary purposes, and serving y, y, culinary utensils.

z.—A case of masonry, thrown open to shew the situation of the boiler, the atmospheric air-tube and the hydrometer, n.

A, a.—The stove.

FIG. 2.—The plan of the boiler and atmospheric air-tube.

a.—The boiler.

b.—The atmospheric air-tube.

c.—The pipe in which the atmospheric air-tube is contained.

d.—The grand steam-pipe.

e.—The safety-valve.

f.—The manhole.

g.—A plate fastened by strong-screws, opened only when it becomes necessary to clean out the boiler.

EXPLANATION OF PLATE II.

FIG. 1.—The steam-receiver, covered with net-work of strong whip-cord, with the stool and foot-stool, covered in like manner with net-work.

a.—The receiver.

b.—The aperture through which the steam passes into the receiver.

c, c, c.—Knobs, three of which are on each face of the receiver, for the purpose of fastening the flannel-baths, so as to prevent the escape of the vapour.

FIG. 2.—A plan of the receiver described in Fig. 1.

a.—A tube, perforated on the upper part, through which the vapour passes into the receiver.

b.—A joint which unscrews for convenience.—This tube, which projects from the aperture, b, Fig. 1, receives the vapour from the grand steam-pipe, Pl. 1. Fig. 1.

FIG. 3. A thin plate of perforated white copper, fitted into the receiver for the purpose of diffusing the vapour in the flannel bath.

a, a.—Two knobs by which to raise the plate.

FIG. 4.—A bath of marble, or of any other sufficient substance, to be filled with cold, hot, or tepid water.

a.—A tube with three branches to heat the bath by steam.

FIG. 5.—A frame of cane-work, occasionally placed over Fig. 4. When a patient, who is to receive the vapour generally, is either too weak to sit, or is desirous of indulging in luxury, he reclines on this frame, belonging to which is a pillow of the same materials, and receives the vapour issuing through the frame, from the water below, which is heated to 180 degrees, in a very short space, by means of the tube noticed in Fig. 4.

a, a.—A part of the frame with hinges, for the convenience of taking water from the bath.

FIG. 6.—An index by which the heat is to be regulated, and is therefore graduated with great nicety.

FIG. 7.—An index, to correspond with another in the room where the bath servant attends, to convey short orders, such as *increase the fire; hot water, &c.*

FIG. 8.—A flexible tube when the bath is to be received topically. It was constructed under instructions given by Mr. Dobson, of Dean-street, who is capable of making it so as to preserve flexibility, and retain the vapour: it is eight feet in length, and may be longer if required.

b.—A cock situated in a metal tube for regulating the vapour, instead of the index Fig. 6.

FIG. 9.—A joint of the flexible tube, with a small pipe.



Fig. 6

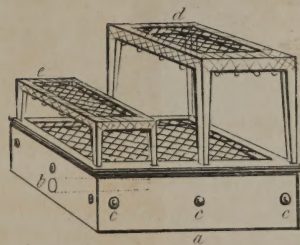


Fig. 1

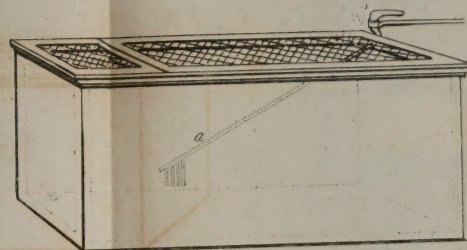


Fig. 4

Fig. 3

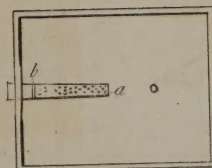
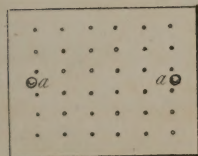


Fig. 2

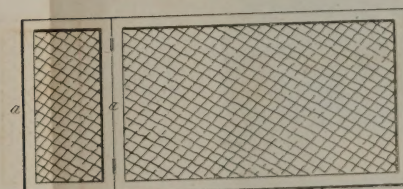


Fig. 5

Scale

6 Feet

Fig. 9

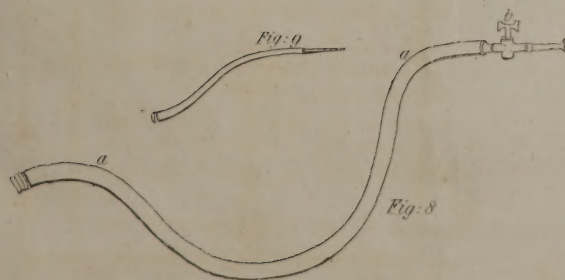


Fig. 8

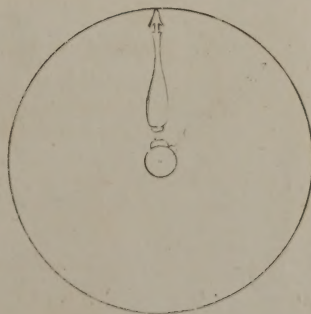


Fig. 7

EXPLANATION OF PLATE III.

A Representation of various Flannel Baths, having the appearance of transparency, to the end that they may be the more easily explained and better understood.

FIG. 1.—The general bath suspended to a cross-bar, a, by ropes, b, b, that spring from two pieces of thick whalebone, c, c, fixed within the flannel:

d, d.—Whalebone hoops by which the flannel is extended so as not to come in contact with the bather.

e.—The receiver.

f.—The aperture through which the steam passes into the receiver. The rest of this figure is explained in Pl. 4.

g.—Where the bath is drawn round the neck of the bather.

FIG. 2.—The situation of a person in the bath, as shewn in Fig. 1, with the stool and foot-stool, as described in Pl. 4, Fig. 1.

FIG. 3.—A hood of flannel, and profile of a face merely to shew position. This is used by the bather as a covering to the head, which appears bare in Fig. 2.

FIG. 4.—A topical bath.

a, a.—Whalebone hoops, as in Fig. 1.

b.—The flannel-bath drawn round the loins, c, instead of the neck as in Fig. 1.

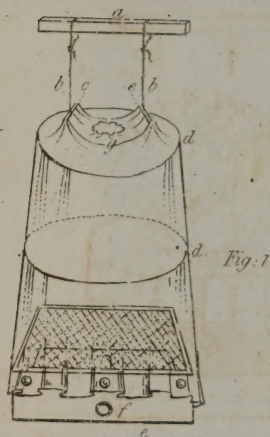
FIG. 5.—The flannel wrapper used by the bather immediately on quitting the bath. It is made full, in the shape of a cone at the upper part for the head; and when a person is enfolded by it, it has the appearance exhibited under this figure.

FIG. 6.—A topical bath of flannel, extended by hoops, as Fig. 1; but suspended by a single tape, or rope, and its upper part shaped like a dome.

b, b, b, b.—Openings into the bath for the head, arms or legs, in local affections. Those openings, which are five or six inches in length, have running tape at their extremities, to draw close round the part to be bathed.

FIG. 7.—An illustration of Fig. 6. On the opposite side is seen a patient with his head, one leg, and one arm in the bath; the two latter supported by a network, a, a.

b, b.—Whalebone, of which the dome is constructed.



Scale 4 Feet

EXPLANATION OF PLATE IV.

Plans and an Elevation of a Bath in the Middlesex Hospital.

FIG. 1.—The elevation, containing two baths, a, b, c; the middle part, b, being the partition.

d.—A dressing-room.

e.—A water-closet.

FIG. 2.—Plan of the bath-room.

FIG. 3.—Plan of the consultation-room.

FIG. 4.—Plan of the kitchen.



Fig. 1

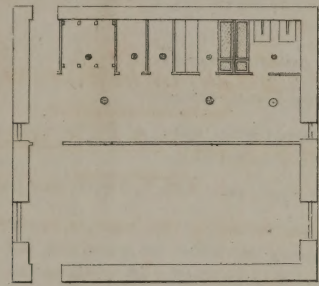


Fig. 2

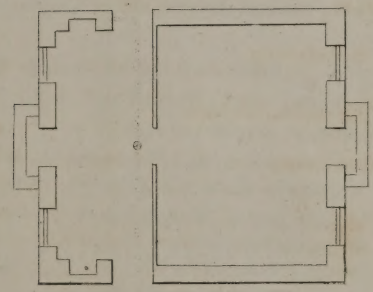


Fig. 3

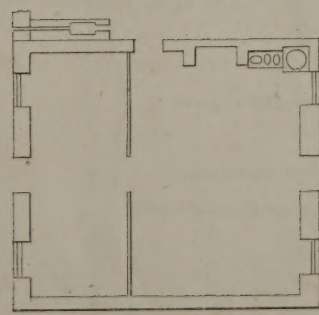


Fig. 4

Scale 40 Feet

EXPLANATION OF PLATE V.

The apparatus, upon an extensive scale, calculated for an Hospital.—The apartment here shown was in the Westminster Hospital.

Fig. 1.—A. The machinery, in miniature, described in Plate I, Fig. 1. The chamber is the kitchen.

B.—A vessel for receiving condensed vapour.

C.—The condenser of the condensing vapour.

D.—A boiler of water, heated by the stove, &c. for the common use of the patients, and other purposes of cleanliness.

E.—The steam and hot air pipes, seen in Pl. I, Fig. 1, that pass through the floor at G.

Fig. 2.—The communication-room, into which the steam and hot air pipes in Fig. 1, enter at H, and extend to I, heating the apartment in their passage.

Fig. 3.—The hot air and steam pipes here branch off, the former passing under the floor, and heating the room by means of the pipes, J, K, L, M, N, O, and the steam-pipe passing at P, proceeds along the wall, at I, through a partition, and terminates at Q.

R, O.—Two steam-heaters, with their stools and hot-water, as in Pl. I, Fig. 1.

P, Q.—Two baths with their cane-work, described in Pl. I, Fig. 1.

R, P.—The valves of the steam-pipe, with their rods, &c.

Fig. 4.—The points marked 1 and 2 form into a close apartment, as in Pl. I, Fig. 1, and the point, 3, is a partition that divides it into two chambers.

The one contains the bath for general and topical uses; the other part of the Russian method, the vapour being admitted at a room like the room, and the patient reclining is sitting, or lying on the benches, &c. going from one to the other as the heat becomes too violent, or as it decreases.

V. 1.—Two cold hot-water-baths, and D. 4, the cold shower, supplied from the cistern, X.

V. 2.—A cistern supplied with heat from a pipe, W, for the hot shower.

Y.—A dressing-room, heated by its pipes, &c.

Z.—A water-closet.

A. a.—A pipe to clean the water-closet.

B. b.—Lighting to the closet and dressing-room.

C. c.—Beds.

EXPLANATION OF PLATE V.

An Apparatus, upon an extensive Scale, calculated for an Hospital.—The Apartments here shewn are in the Middlesex Hospital.

FIG. 1.—A. The machinery, in miniature, described in Plate 1, Fig. 1. The situation is the kitchen.

b.—A vessel for receiving condensed vapour.

c.—The conductor of the condensing vapour.

d.—A boiler of water, heated by the stove, e, for the common use of the patients, and other purposes of cleanliness.

f.—The steam and hot air pipes, seen in Pl. 1, Fig. 1, that pass through the floor at g.

FIG. 2.—The consultation-room, into which the steam and hot air pipes, in Fig. 1, enter at h, and extend to i, heating the apparatus in their passage.

FIG. 3.—The hot air and steam-pipes here branch off; the former passing under the floor, and heating the room by means of the pataras, j, j, j, j, j, j; and the steam-pipe entering at k, proceeds along the wall, at l, through a partition, m, and terminates at n.

o, o.—Two steam-receivers, with their stools and foot-stools, as m. Pl. 2, Fig. 1.

p, p.—Two baths with their cane-work, described in Pl. 2, Fig. 1.

q, q.—Branches of the steam-pipe, with their cocks, r, r.

† The points marked 1 and 3 form into a close apartment, as in Pl. 4, Fig. 1; and the point, 2, is a partition that divides it into two distinct rooms.

The one contains the bath for general and topical uses; the other partakes of the Russian method, the vapour being admitted at s, soon fills the room, and the patients receive it sitting, or lying on the benches, t, u, going from one to the other as the heat becomes too violent, or as it decreases.

V. 1.—The cold shower-bath, and D. d. the cold shoot, supplied from the cistern, X.

V. 2.—A cistern supplied with heat from a pipe, w, for the hot shoots.

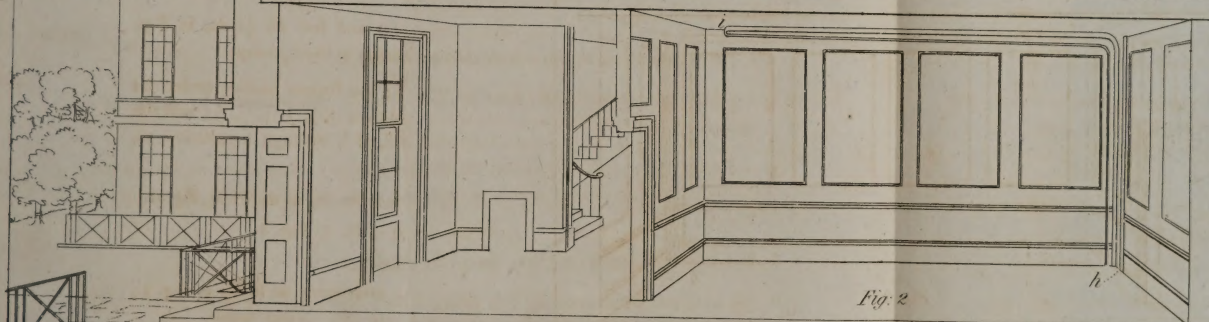
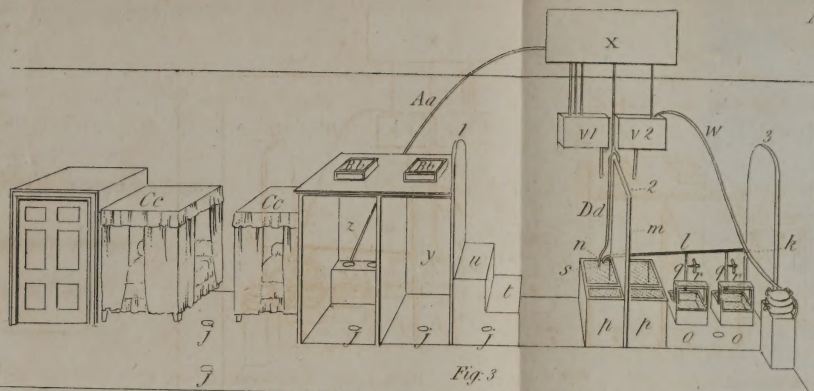
Y.—A dressing-room, heated by its patara, j.

Z.—A water-closet.

A. a.—A pipe to clean the water-closet.

B. b.—Lights to the closet and dressing-room.

C. c.—Beds.



Drawn & Etched by G. Cooper

Pub^d by John Booth, April 1809, Duke Street, Portland Place, London



EXPLANATION OF PLATE VI.

4. Portable Bath.

Fig. 1.—a, The boiler.

b.—The receiver.

c.—The steam-pipe, which enters the receiver at d.

e.—A cock for regulating the heat of the vapour in the receiver, by means of a

rod, f.

g.—A spherical vessel of pewter, which opens at h. Its purpose is to contain herbs, when a medicated vapour is required; when used the steam-pipe extends to

it at i.

k. k.—Joints in the steam-pipe, united by an union-screw.

l, l, l, l.—Posts for supporting the frame-work, m, round the exterior of which channel cast-iron are connected. The posts are removable at pleasure.

Fig. 2.—A plan of the receiver described in Fig. 1.

Fig. 3.—This apparatus is particularly well calculated for on board a ship; and the medical gentleman, in applying it, will perceive that it may be carried through the decks, and conveyed to any part of the vessel, either above or below.

EXPLANATION OF PLATE VI.

A Portable Bath.

FIG. 1.—a, The boiler.

b.—The receiver.

c.—The steam-pipe, which enters the receiver at d.

e.—A cock for regulating the heat of the vapour in the receiver, by means of a rod, f.

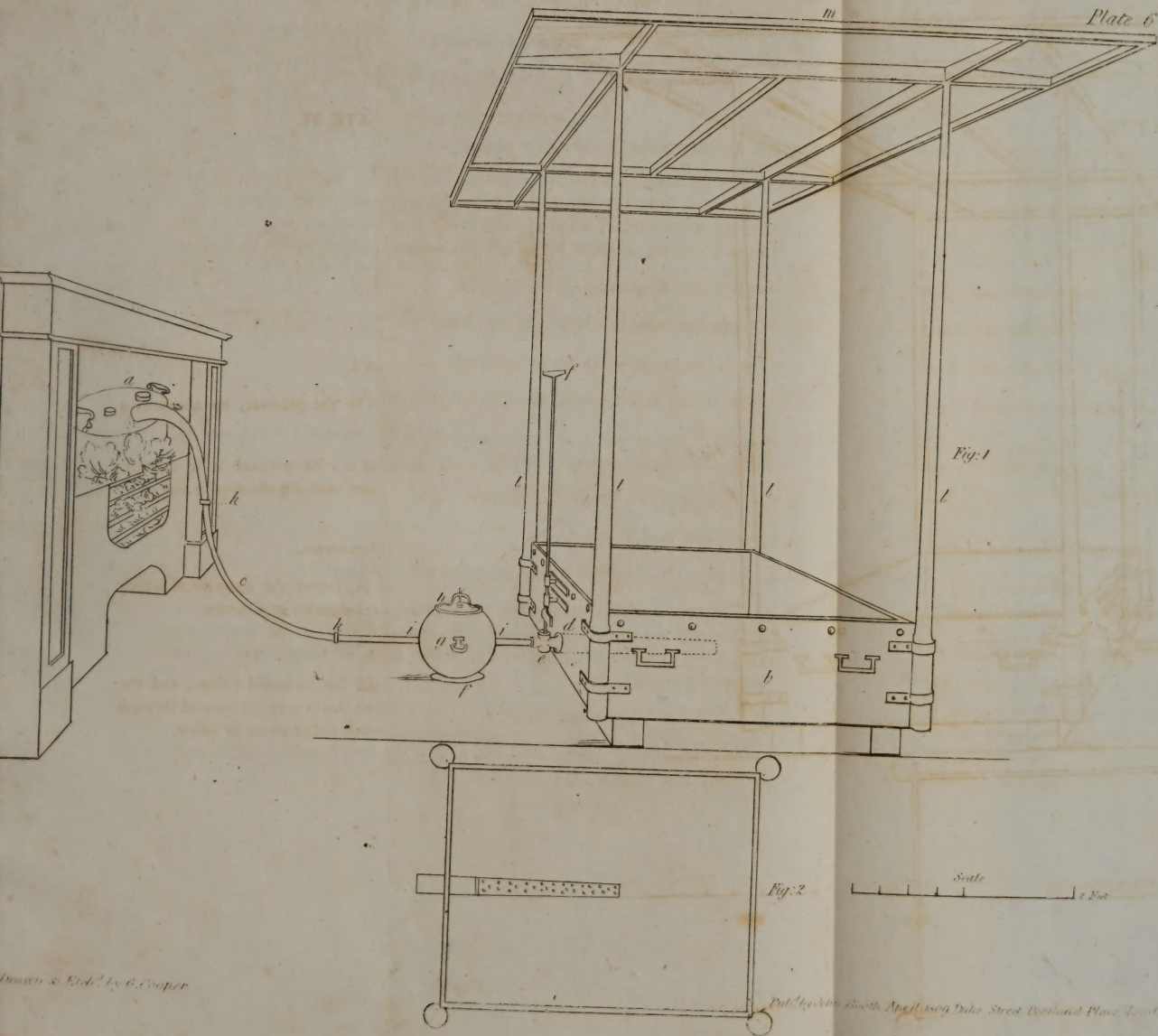
g.—A spherical vessel, of pewter, which opens at h. Its purpose is to contain herbs, when a medicated vapour is required; when used the steam-pipe screws to it at i, i.

k, k.—Joints in the steam-pipe, united by an union-screw.

l, l, l.—Posts for supporting the frame-work, m, round the exterior of which flannel curtains are connected. The posts are removable at pleasure.

FIG. 2.—A plan of the receiver described in Fig. 6.

✂ This apparatus is particularly well calculated for on board a ship; and the medical gentleman, in applying it, will perceive that it may be carried through the decks, and conveyed to any part of the vessel, either above or below.



EXPLANATION OF PLATE VII.

- Fig. 1.—A patient receiving the vapour topically.
- Fig. 2.—The funnel bath, drawn round the patient's joints at, b. In this the vapour is supposed to be introduced: passing from the boiler through the communicating vessel, described in Pl. 6, the conducting tube where the vapour, contained at c, emerges on the opposite side at d; and is introduced into the funnel bath at e.
- Fig. 3.—A topical bath, for the breast, hip, knee, &c.
- a.—The end to be applied to the part affected.
- b.—The aperture, through which the vapour is introduced.
- c, c.—Slight hooks of whale bone, capable of expansion or contraction; as is to adjust the bath to the part to be treated.
- d, d.—Taper by which the bath is fastened.
- Fig. 4.—An illustration of Fig. 3.
- Fig. 5, 6.—Shows how the whalebone is expanded and contracted.
- Fig. 7.—The patient reclining, and the bath employed; the same as in Pl. 1, except that in this fig. the vapour is introduced at the upper, instead of the lower end of the bath, and the patient holds the tube so as to receive the vapour immediately on his breast.
- Fig. 8.—The frame-work as described in Pl. 6.
- Fig. 9.—The exterior of the frame-work in Pl. 7, with its outline of funnel joined up at e, to show the topical bath.

EXPLANATION OF PLATE VII.

A Portable Bath, with the Apparatus and Appendages.

FIG. 1.—A patient receiving the vapour topically.

a.—The flannel bath, drawn round the patient's loins at, b. In this fig. the vapour is supposed to be medicated: passing from the boiler through the medicating vessel, described in Pl. 6, the conducting tube enters the vapour receiver at c; emerges on the opposite side, at d; and is introduced into the flannel bath, at e.

FIG. 2.—The hood described in Pl. 3, Fig. 3.

FIG. 3.—A topical bath, for the breast, hip, knee, &c.

a.—The end to be applied to the part affected.

b.—The aperture, through which the vapour is introduced.

c, c.—Slight hoops of whale bone, capable of expansion or contraction; so as to adapt the bath to the part to be bathed.

d, d.—Tapes by which the bath is fastened.

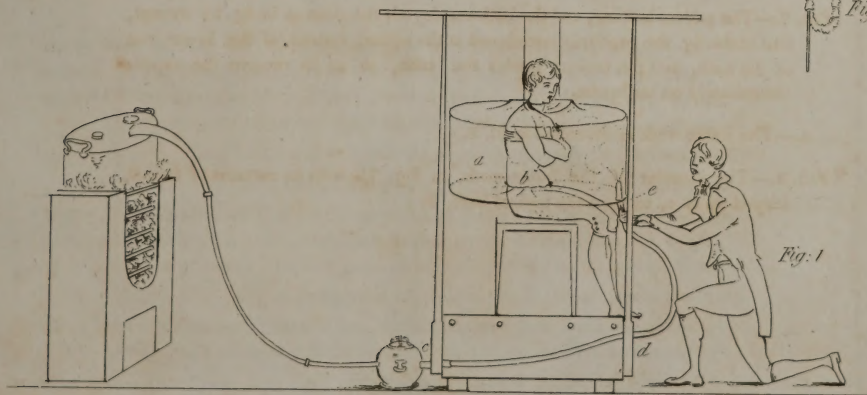
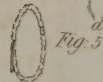
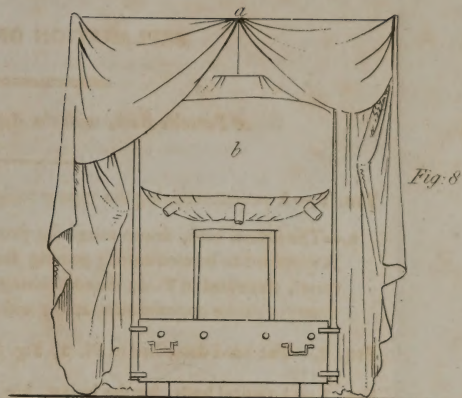
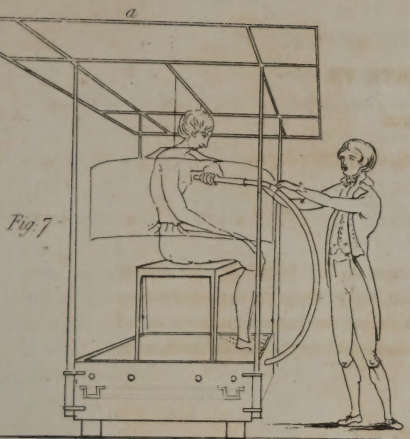
FIG. 4.—An illustration of Fig. 3.

FIG. 5, 6.—Shews how the whalebone is expanded and contracted.

FIG. 7.—The patient bathing, and the bath employed, the same as in fig. 1; except, that in this fig. the vapour is introduced at the upper, instead of the lower end of the bath, and the patient guides the tube, so as to receive the vapour immediately on his breast.

a.—The frame work as described in Pl. 6.

FIG. 8.—The exterior of the frame-work, in Fig. 7, with its curtains of flannel, looped up at a, to shew the topical bath, b.



Drawn & Engr'd by G. Cooper

Scale 1/2 Feet

Pub'd by John Booth, April 1800, Duke Street, Portland Place, London

EXPLANATION OF PLATE VIII.

Following figures, one above another, calculated for a Private Family.

No. 1.—The apparatus described in Pl. I, Fig. 1, but the pipes for the steam and atmospheric air, are reversed in this Fig.

2.—The grate, mentioned in the description of Pl. I, fixed on the outside of the house, for introducing atmospheric air.

3.—The case containing the atmospheric air pipe, which in order to have its heat kept up receives steam from the grand steam pipe; consequently there must be a canal for carrying off the condensed vapour, and the tube for that purpose commences at d, and proceeding to e, is joined by the tube f, which carries off the superabundant vapour from the whole tube as described under Pl. I, Fig. 1.

4.—The vessels for receiving the condensed vapour.

5.—A cold bath, supplied with water from a pump, h, a pipe, k, which has a cock, l.

This pump also supplies the upper room with water conveyed through the pipe, m.

6.—Waste water pipes that meet at o.

7.—A pipe through which cold water is carried into the boiler as in Pl. I, Fig. 1.

No. 2.—A section of the bathing room with its apparatus.

1.—The ends of the room, or bath, made of timber, plank.

2.—A cross bar, to which the several bath etc. are suspended.

3.—The receiver.

4.—The pipe, by which the steam is introduced into the receiver.

5.—The index or regulator.

6.—The lever, applicable to the regulator. In the position seen in the plate, e, it throws up, and e, down, the vapour is conducted into the marble bath, by the pipe, f, when turned, that g, is thrown up, and is brought down, the steam enters in the marble bath and enters the receiver, h.

7.—A column, supplied by the pipe, m, from the pump, as in Pl. I.

8.—A branch from the column, k, to supply the bath, l.

9.—A pipe from the column, k, that, passing through the foot of the column, l, at e, and supplies the boiler with cold water, upon the pump the described in Pl. I, Fig. 1. It also supplies the bath, h, with cold water, by a cock, n.

10.—A valve, fixed in the heated atmospheric air pipe, o, in Pl. I.

11.—A small pipe that joins the bath, h, and the end of the bath room, as in Pl. I.

12.—An index for orders, described in Pl. I, Fig. 1.

EXPLANATION OF PLATE VIII.

Bathing Rooms, one above another, calculated for a Private Family.

FIG. 1. a.—The apparatus described in Pl. 1, Fig. 1; but the pipes for the steam and atmospheric air, are reversed in this Fig.

b.—The grate, mentioned in the description of Pl. 1, fixed on the out-side of the house, for introducing atmospheric air.

c, c.—The case containing the atmospheric air pipe, which, in order to have its heat kept up, receives steam from the grand steam pipe; consequently there must be a canal for carrying off the condensed vapour, and the tube for that purpose commences at d, and proceeding to e, is joined by the tube f, which carries off the superabundant vapour from the safety valve, as described under Pl. 1, Fig. 1

g.—The vessels for receiving the condensed vapour.

h.—A cold bath, supplied with water from a pump, i, by a pipe, k, k, which has a cock, l.

This pump also supplies the upper room with water conveyed through the pipe, m.

n.—Waste water pipes that meet at o.

p.—A tube through which cold water is carried into the boiler as in Pl. 1, Fig. 1.

FIG. 2.—A skeleton of the bathing room with its apparatus.

a, a.—The ends of the room, or box, made of timber plank.

b.—A cross bar, to which the flannel baths are suspended.

c.—The receiver.

d.—The pipe, by which the vapour is immediately thrown into the receiver.

e.—The index or regulator.

f, and g.—The levers, applicable to the regulator. In the position seen in the plate, *i. e.* f thrown up, and g down, the vapour is conducted into the marble bath, h, by the tube, i, i; when reversed, that is, g thrown up, and f brought down, the steam ceases in the marble bath and enters the receiver, c.

k.—A cistern, supplied by the pipe, m, from the pump, in Fig. 1.

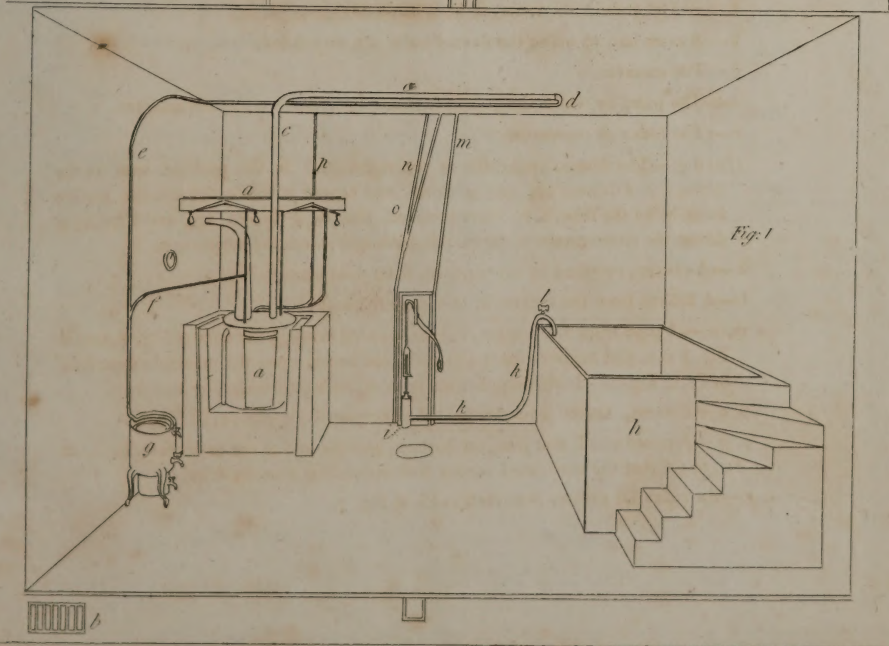
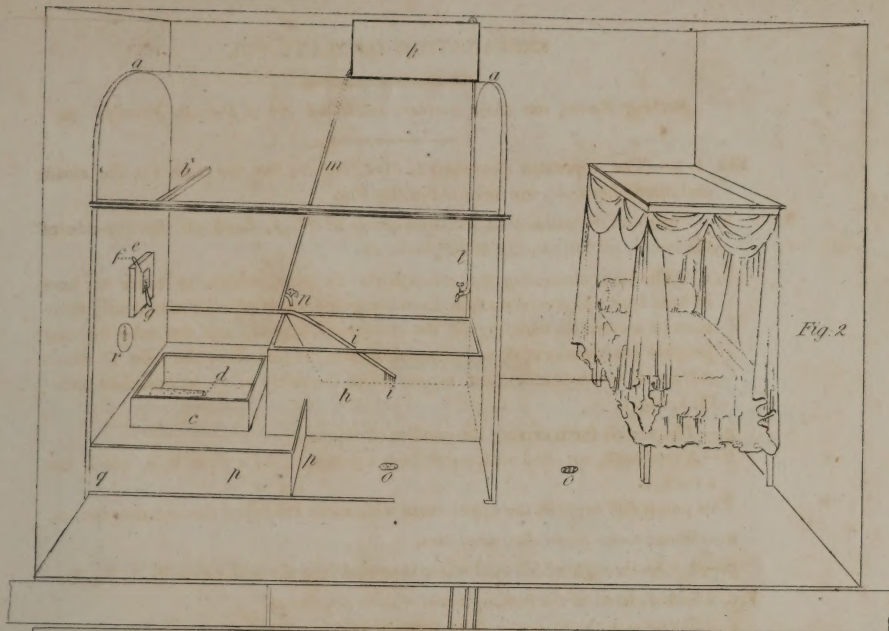
l.—A branch from the cistern, k, to supply the bath, h.

m, m.—A pipe from the cistern, k, that, passing through the floor of Fig. 2, enters Fig. 1 at n, and supplies the boiler with cold water, upon the principle described in Pl. 1, Fig. 1. It also supplies the bath, h, with cold water, by a cock, n.

o, o.—Pataras, heated from the heated atmospheric air pipe, c, in Fig. 1.

p, p.—A raised plank that joins the bath, h, and the end of the bath room, a, a, at g, to prevent the condensed vapour from spreading over the floor.

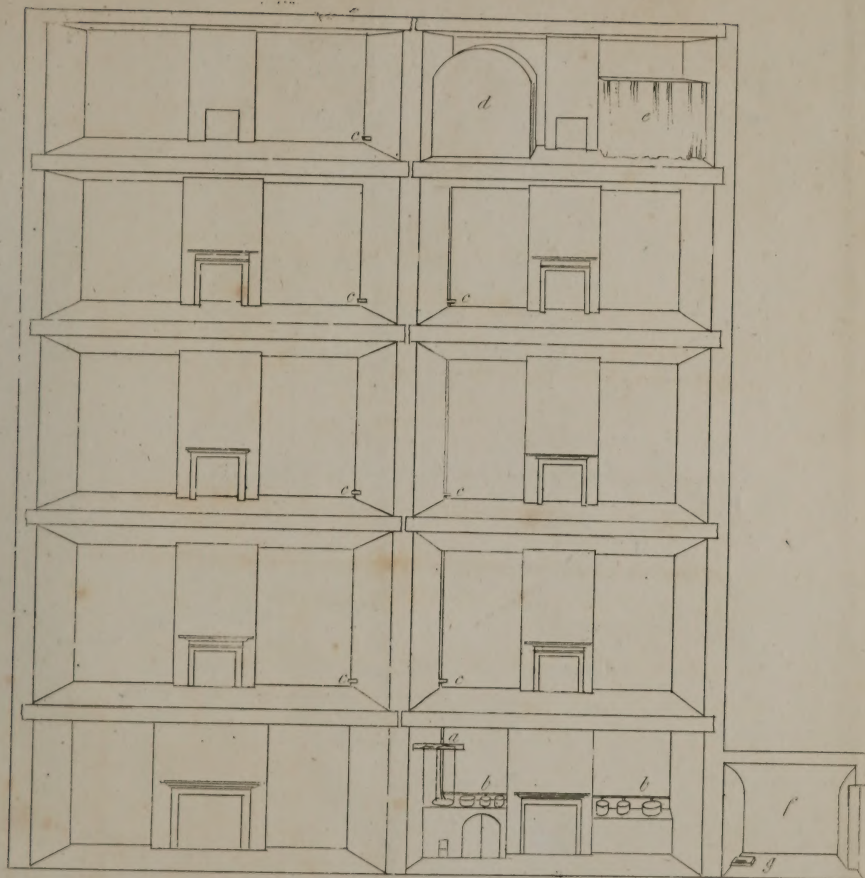
r.—An index for orders, described in Pl. 2, Fig. 7.



EXPLANATION OF PLATE IX.

This Plate exhibits the interior of a House, from the Kitchen to the Garret; and is intended to shew that the Vapour can be conveyed from the latter to the former.

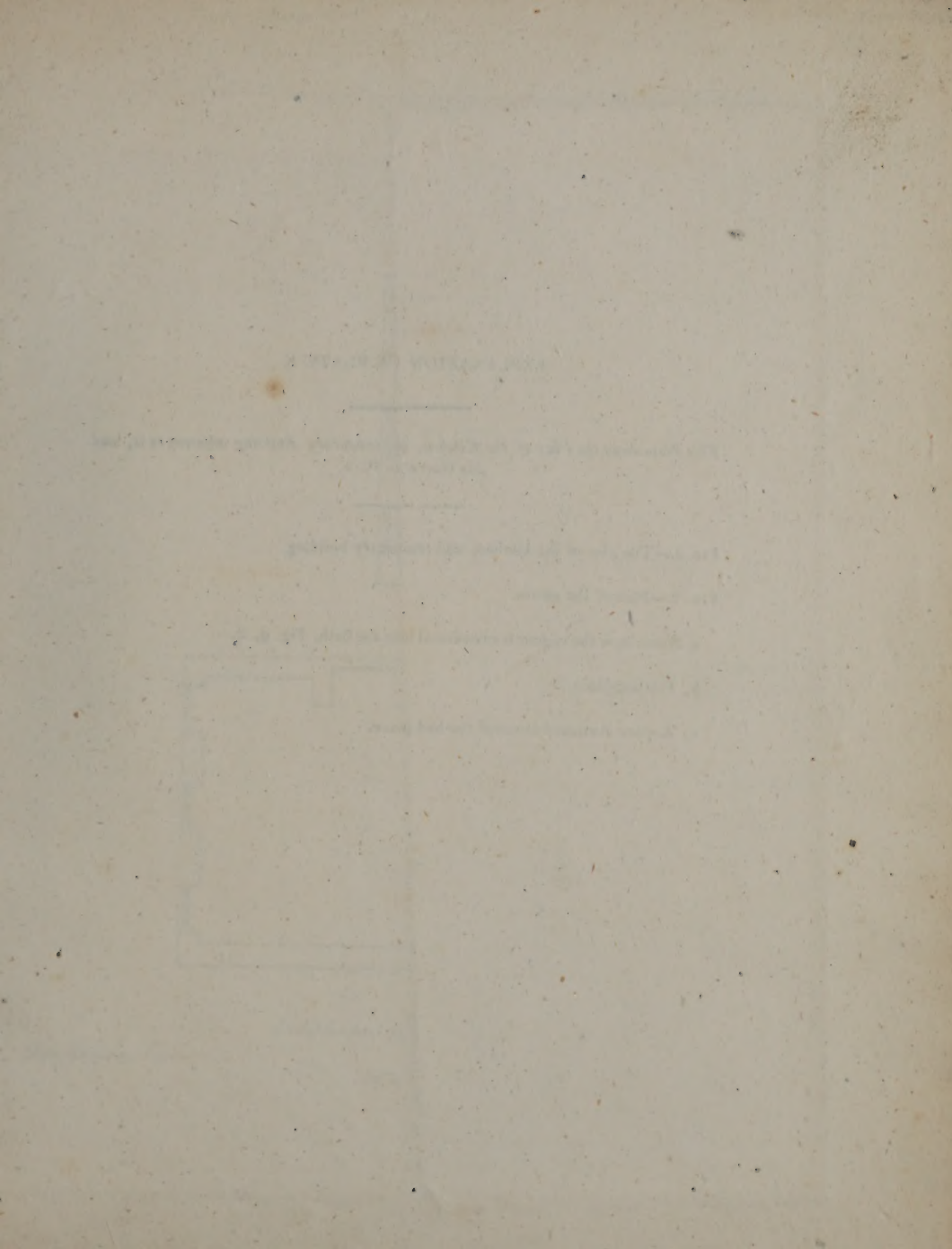
- a.—The apparatus, as m, Pl. 1, Fig. 1.
- b, b.—Pipes, from the grand steam-pipe, to heat closets and serve culinary utensils, as in Pl. 1, Fig. 1.
- c, c, c, c.—Tubes from the steam-pipe, for conducting the vapour into the bath.
- d.—The box, or bathing-room, as in Pl. 3, Fig. 2; with this difference, that here it is closed, as in Pl. 4, Fig. 1.
- e.—A bed, as in Pl. 5, Fig. 3.
- f.—A stable, or temporary building near the kitchen, for bathing horses.
- g.—The receiver, as in Pl. 2, Fig. 1.



Scale 140 Feet

Drawn & Engr'd by G. Cooper

Pub.^d by John Barth, April 1832, Duke Street, Portland Place, London



EXPLANATION OF PLATE X

This Plate shews the Plan of the Kitchen, the temporary Building adjacent to it, and the Garret in Pl. 9.

FIG. 1.—The plan of the kitchen, and temporary building.

FIG. 2.—Plan of the garret.

a, Shews how the vapour is introduced into the bath, Fig. 9, d.

b, The bed-place.

c, A space curtained in round the bed-place.

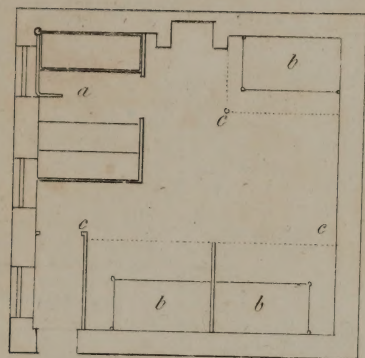


Fig. 2

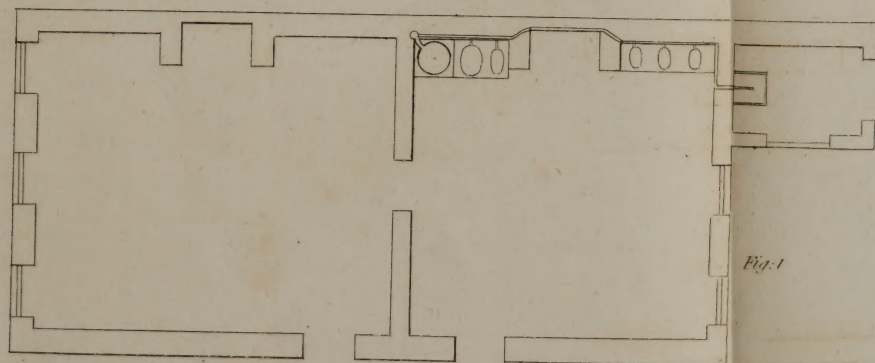
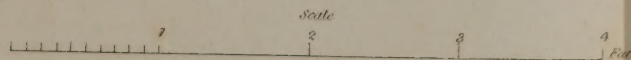


Fig. 1



Drawn & Engr'd by C. Cooper

Pub'd by John Booth, April 1809, Duke Street, Portland Place, London

EXPLANATION OF PLATE XI.

Representing a Bath upon the most diminished Scale, with portable Apparatus.

FIG. 1. The bath, constructed upon a common Bedet frame.

- a.—The receiver.
 - b.—The aperture, for the introduction of the vapour.
 - c, a.—Net-work covering, on which to rest the legs, &c. in topical applications.
 - d, a.—Similar net-work for the arms, &c.
- ☞ On either of these frames children, to the age of two or three years, may be placed, as they are sufficiently strong to support their weight.

FIG. 2. The Boiler with its stove. It can be heated, by pieces of dry wood, in five minutes. It contains five pints of water, with sufficient space left for the operation of the vapour.

- a.—The Boiler.
- b.—The safety-valve.
- c.—The notice pipe, which shews when the water is nearly evaporated.
- d, a. Funnel for supplying the Boiler with water.
- e, a. Cock for drawing the water off.
- f.—The tube for conveying the vapour into the receiver.
- g.—The regulating cock.
- h.—The stone.
- i.—Flues.

FIG. 3. The appearance of FIG. 1. when covered with flannel.

- a.—An aperture, for the leg, thigh and hip, distended by pieces of whalebone b, b, and projecting five or six inches: with an extension of flannel, c, for the purpose of closing it occasionally.
- d.—An aperture for the arm, shoulder, head and breast.
- e.—An aperture for a Thermometer.

FIG. 4. A Boiler.

- a.—The Boiler inclosed in its stove or furnace, b.
- c.—The safety-valve, which may also be employed for throwing vapour into hot-houses.
- d.—The tube by which the Boiler is supplied with water.
- e.—The neck of the pipe, that conveys the vapour into the receiver, with its cock, f.
- g.—A cock, for drawing off the water.
- h.—The flue, composed of joints.

FIG. 5. A metal vessel, with joints, a, b, to be affixed to a flexible tube, c, for conveying vapour to any part of the frame.

- d.—The surface of the vessel, perforated throughout with small holes: between each of the joints is a metallic retarder perforated in like manner, which assists in diffusing as well as in checking the vapour.

Should medicated vapour, through this medium, be required, the retarders to be taken out, and the proper herbs introduced, as there is sufficient space.

☞ For the two Boilers above mentioned, Mr. Lloyd, of the Strand, has a patent; and the conditions upon which he grants licences to manufacture them are annexed.*

FIG. 6. Represents a Boiler for generating vapour on board a ship, and a part of the ship's deck.

- a.—The Boiler.
- b.—The safety-valve.
- c.—A tube for conveying the vapour below the deck, which, for that purpose, it penetrates at d, and following the course of the dotted line e, enters the receiver at f.

* *Edmd. Lloyd* has no objection to grant his Licence to any Manufacturer who chuses to make his Patent Boilers, for the use of *MR. COCHRANE'S Steam Bath*, upon the following terms; that is to say, for every Patent Boiler, the size not to exceed 3 gallons, seven shillings; for every larger size, not exceeding 6 gallons, ten shillings and sixpence; and all above that dimension, twenty one shillings; to be paid to the Patentee. Or the Patent Boilers may be had, ready made, on application to *Edmd. Lloyd*, No. 178, Strand, near Norfolk Street, London.

Fig. 1

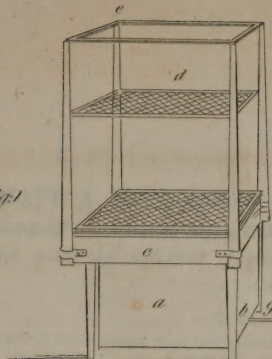


Fig. 2



Fig. 3

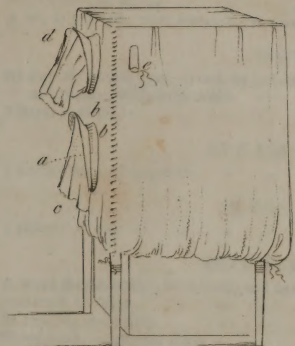
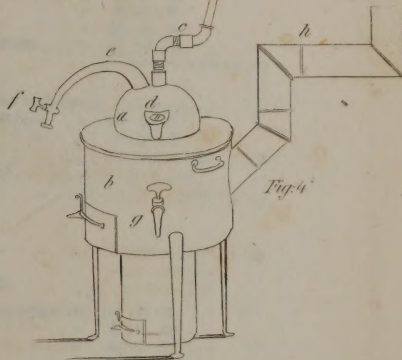


Fig. 4



Scale 2 Feet

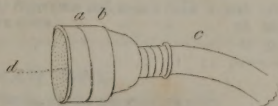


Fig. 5

Scale 3 Inches

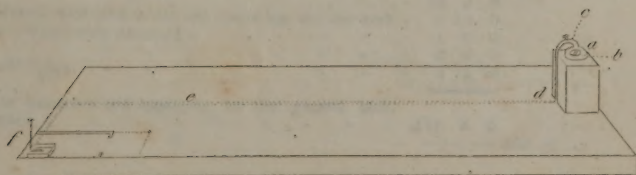


Fig. 6

**ESTIMATE A, No. 1, referred to in the succeeding Estimates, of the
Expense of constructing a Bath for an Hospital upon the large Scale
and with the different Apparatus, as delineated in Plate 5.**

No.	THE BOILER.			Total.
1	A strong steam copper with two cocks, a double head, 3 feet deep and 2 feet 6 over, a manhole worn round ditto for cold air, with safety valve and pipe, leavers, valves, rods, weights, &c.	£. s. d.	£. s. d.	
		-	50 10 0	
2	70 feet of steam pipe from the boiler to baths, from 9 inches to 1½ inches diameter	at 4s. 6d. per foot	15 15 0	
3	10 cocks, wanted for different parts	at 7s. 6d. each	3 15 0	
4	260 feet of lead pipe for water, waste, and various uses and sizes, joints, &c.	at 2s. 6d. per foot	32 10 0	
5	A set of ironwork, for the boiler, complete	-	8 15 0	
6	Brickwork and fixing	-	10 0 0	
7	A worm and tub, with reservoir to receive the waste steam	-	5 10 0	
				126 15 0
HOT AIR.				
8	80 feet of double pipe, to convey hot air from the boiler to different rooms, with large cocks	at 9s. per foot	36 0 0	
9	7 Brass patters	at 21s.	7 7 0	
				43 7 0
STEAM KETTLES.				
10	2 kettles for cooking with	-	-	7 7 0
HOT CLOSET.				
11	1 closet do.	-	-	7 7 0
DOUBLE BOILER.				
12	A small double boiler, with cocks and covers, for cooking soups, &c.	10 10 0		
13	Ironwork for ditto	5 10 0		
14	Brickwork and fixing	5 5 0		
15	Woodwork, to enclose ditto	3 10 0		
			24 15 0	
BATH ROOMS.				
16	The front, circular top, cross partitions, benches top of water closet, skylight, with fourteen squares of glass for ditto, hinges, locks, handles to the whole: materials and men's time	145 10 0		
17	Lead, for the rooms, and laying down ditto	24 10 0		
18	Plugs for ditto	0 9 0		
			170 9 0	
STEAM BOX.				
19	1 wainscot steam box and moulded frame, on the top strained with whipcord	4 4 0		
	lined with tinn'd copper, plates inside, copper pipes, &c.	8 5 0		
			12 9 0	
20	1 wainscot stool, with brass knobs and turned legs and net work	1 10 0		
21	1 footstool strained with whipcord	1 0 0		
22	1 plug	0 4 0		
23	1 lever with index	2 2 0		
Total cost of one steam box and apparatus, for the general bath, carried forward		£17 5 0		
E				380 0 0

18 *Estimate of the Expence of constructing Vapour Baths, &c.*

No.		Brought forward	Total.		
			£.	s.	d.
	Total cost for the local bath	-	17	5	0
24	For which is required a wainscot frame slope, canopy, and a square frame, strained with common netting slung with lines	2 8 0	19	13	0
			36	18	0
25	Cold, tepid, or hot bath.				
	1 deal bath, lined with copper, and frame at top, and lined with tinn'd copper	-	19	19	6
	1 ditto, for the room embracing the Russian method	-	19	19	6
			39	19	0
CISTERN.					
26	A large cistern with lead-work plugs and leaders	-	18	2	0
	Cocks and batts, &c.	-	4	18	0
			23	0	0
HOT CISTERN.					
27	A hot cistern, lined with lead	-	7	10	0
SHOWER BATH.					
28	A shower bath and frame	-	5	15	6
UPPER HOT CLOSET.					
29	Enclosure for a steam hot closet	-	2	18	0
	A hot closet, ditto inclusive, 2 feet wide, 2 feet deep, 2 feet 6 high	-	6	0	0
	A steam top for ditto	-	4	4	0
			13	2	0
WATER CLOSET.					
30	A deal seat and riser	-	3	3	0
	2 Copper pans	-	4	4	0
	20 feet of soil pipe	-	6	0	0
			13	7	0
CURTAINS AND RODS.					
31	A set of cotton curtains complete, to enclose the bath rooms	-	18	12	0
	A set of rods and standards, for ditto	-	9	15	0
			28	7	0
32	Sundries which cannot be accounted for	-	10	10	0
	Men's time, fitting and fixing the whole apparatus complete	-	30	0	0
			40	10	0
			588	8	6
	Amount cost of one complete set of flannels, as per estimate, No. 5	-	14	4	0
			602	12	6
	Total	-	£	602	12 6

An ESTIMATE, No. 2, of the Expences of constructing a Bath for a Private Family, with the different Apparatus, as delineated in Plate 8.

No.		THE BOILER.	
1	Steam copper as per estimate	A. No. 1	50 10 0
2	30 feet of steam pipe	do. No. 2	6 15 0
		Carried forward	£57 5 0

Estimate of the Expence of constructing Vapour Baths, &c. 19

No.			Brought forward	£. s. d.			Total.
				£.	s.	d.	£. s. d.
3	6 cocks	- - - -	A. No. 3	-	-	2 5 0	
4	160 feet of lead pipe	- - - -	do. No. 4	-	-	20 0 0	
5	1 set of iron works, for the boiler, complete,	- - - -	do. No. 5	-	-	8 15 0	
6	Brick work and fixing	- - - -	do. No. 6	-	-	10 0 0	
7	1 worm and tub, with reservoir to receive the waste steam,	- - - -	do. No. 7	-	-	5 10 0	
							103 15 0

HOT AIR.

8	20 feet of double pipe, as per estimate	-	A. No. 8	-	-	9 0 0	
9	2 brass pattaras	- - - -	do. No. 9	-	-	2 2 0	
							11 2 0

BATH ROOM.

16	The front circular top, with 2 squares of glass for ditto, hinges, bolts, handles, materials, and men's time	- - - -	-	-	-	52 10 0	
17	Lead for the room, and laying down ditto	- - - -	-	-	-	6 0 0	
18	1 plug for ditto	- - - -	-	-	-	0 4 6	
							58 14 6

STEAM BOX.

19	One steam box and apparatus, as per estimate, A. No. 19 to 23	-	-	-	-	17 5 0	
20		-	-	-	-		
23	One frame for the local bath	-	-	do. No. 24	-	2 8 0	
24		-	-	-	-		19 13 0
25	Cold, tepid, or hot bath	- - - -	do. No. 25	-	-	19 19 6	
23	1 lever with index	- - - -	do. No. 23	-	-	2 2 0	
							22 1 6

CISTERN.

26	A small deal cistern	- - - -	do. No. 26	-	-	6 10 0	
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SHOWER BATH.

28	A shower bath	- - - -	do. No. 28	-	-	5 15 6	
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COLD PLUNGING BATH.

	A cold bath of bricks, tiled bottom, terraced inside	- - - -				22 10 0	
--	--	---------	--	--	--	---------	--

PUMP.

	A pump and fixing	- - - -				7 7 0	
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WELL.

	A well, or reservoir, to supply the pump with water from the public pipes	- - - -				16 10 0	
32	Sundries which cannot be accounted for, men's time, fitting and fixing the whole apparatus complete	- - - -				25 0 0	
							298 18 6
Amount cost of one complete set of flannels, &c per estimate, No. 5						14 4 0	
				Total			£313 2 6

*An ESTIMATE, No. 3, of the Expence of constructing a Portable Bath,
with the different Apparatus, as delineated in Plate 6 and 7.*

No.	THE BOILER.	Total.
	A copper boiler containing 16 quarts, independent of the room for steam, with safety valve, manhole cock for do. - - -	£. s. d. 3 13 6
	Lead pipes and union screws and leading from the boiler to the bath	3 13 6
	A pewter ball, with a screw top and safety valve, other screws and retarders handles for do. &c. - - -	5 0 0
		12 7 0

THE FLEXIBLE PIPES.

7 feet of flexible pipe, a wire worm for ditto, lined with oil skin and covered with cloth, on the outside, a brass cock tinned, a pewter pipe and screw to ditto, with retarders - - -	3 6 0
2 feet of small flexible pipes, with screws complete - - -	0 14 0
A nest of screws with globical ends, with holes and retarders to fit on the large hose - - -	2 2 0
	6 2 0

STEAM BOX.

24 One steam box and apparatus as per estimate, A. No. 24	19 13 0
8 iron rings, tinned screws for the corners of the box, to ship the pillars, in men's time, &c. - - -	2 14 0
A wainscot framed double tester lath, supported by four round pillars, brass caps - - -	2 18 0
A short copper pipe with cock, a jointed brass handle in front, to turn the steam into the bath, a brass screw cap, to admit the lead pipe through the steam box, - 2 pair of brass handles on the box - - -	3 11 0
	9 3 0
	28 16 0
Amount cost of one complete set of flannels, as per estimate, No. 5, - - -	47 15 0
	19 17 0
	Total 67 2 0

The cost of an extra patent copper steam-engine, made by Edward Lloyd and Co., No. 178, Strand; as in plate 11, containing 13 quarts (independent of the room for steam) with dome head, copper crane-neck, with stop cock and connecting screw; condensing valve, with extra double jointed elbow-shifting pipe, replenishing pipe, with brass cap and flush screw; also screw water cock, mounted in a strong wrought iron plate furnace, with elbow pipe, &c. complete - - -	9 9 0
Which, if preferred, the above boiler will be unnecessary, deduct cost - - -	3 13 6

The difference will be - - - - - 5 15 6

Total £72 17 6

An ESTIMATE, No. 4, of the Expence of constructing a Small Portable Bidet-Bath, with the different Apparatus, as delineated in Plate 11.

£ s. d. £ s. d.

THE BOILER.

A patent steam boiler, made by Edward Lloyd and Co. No. 178, Strand; containing five pints (independent of the room for steam) with brass funnel and air tight screw, safety valve, hot water cock, notice pipe, brass steam cock and pipes. Iron furnace with tin bidet pan and retarders complete	-	-	-	3	16	0
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THE BATH.

A mahogany box, top, bidet and pan	-	-	-	-	2	12	0
A wainscot moulded frame, strained with netting, for the top of the bidet when the pan is removed	-	1	2	4			
Four wainscot turned pillars, with strong iron tinned rings and straps for the corners of the bidet	-	1	19	0			
A wainscot tester frame, strained with netting	-	1	3	8			
					4	5	0

Amount cost of the flannel bath, as per estimate, No. 5 - - - 10 13 0

Total £13 2 0

ESTIMATE, No. 5, cost of the Flannels for the Steam Bath.

THE GENERAL BATH.

4½ yards of white bath-coating flannel, 2 yards wide, at 10s. per yard	-	2	2	6
2 whalebone hoops, and 4 bearing pieces	-	1	3	0
Making, with tape	-	-	-	0 13 0
				3 18 6

THE HOOD.

¾ yard of white-bath coating flannel, 2 yards wide at 10s.				
per yard	-	-	-	0 5 0
Making ditto	-	-	-	0 1 6
				0 6 6

BELL TINT.

4½ yards of white bath-coating flannel, 2 yards wide, at 10s.				
per yard	-	-	-	2 2 6
Making ditto	-	-	-	0 5 0
				2 7 6
				6 12 6

THE LOCAL BATH.

6 yards of white bath-coating flannel 2 yards wide, at 10s. per yard	-	3	0	0
6 whalebone hoops, for the arm and leg holes	-	-	-	0 5 0
Making, with tape	-	-	-	0 17 0
				4 2 0

Carried forward - 13 14 6

22 *Estimate of the Expence of constructing Vapour Baths, &c.*

FLANNELS—continued.	Brought forward	Total:
THE UPPER BATH.		
3½ yards of white bath-coating flannel, 2 yards wide, at 10s. per yard -	1 15 0	
3 whalebone hoops and 4 bearing pieces - - - - -	0 11 6	
Making, and tape - - - - -	0 11 0	
		2 17 6

THE BREAST BATH.		
½ yard of white bath-coating flannel, 2 yards wide, at 10s. per yard -	0 5 0	
2 whalebone hoops and two straight pieces - - - - -	0 2 6	
Making, and tape - - - - -	0 4 6	
		0 12 0

Total expence of one complete set of flannels for private family, as per estimate, No. 2, £14 4 0

THE CURTAINS FOR THE PORTABLE BATH:		
9½ yards of white bath-coating flannel, 2½ yards wide, at 10s. per yard -	4 17 6	
Making, binding, and tape - - - - -	0 15 6	
		5 13 0
Total expence of one complete set of flannels for a portable bath, as per estimate, No. 3 - - - - -		
		£19 17 0

THE PORTABLE BIDET-BATH.		
3 yards of white bath-coating flannel, 2 yards wide, at 10s. per yard -	1 10 0	
6 whalebone hoops for the arm and leg holes - - - - -	0 5 0	
Making, cords, laces, and tape - - - - -	0 14 0	
		2 9 0

